

Release Notes Version 2.4.2

This document provides an overview of how Natural ISPF Version 2.4.2 differs from the previous version. Natural ISPF Version 2.4.2 is a product release that contains a number of problem solutions.

Important Note:

With the release of Natural ISPF Version 2.4.2, versions lower than 2.4.1 can no longer be supported. You are therefore urged to migrate to the current version at your earliest convenience.

With the release of the next Natural ISPF version, support for Version 2.4.1 will be stopped.

This document addresses the following topics:

- Purpose and Limitations of this Release
- Problem Solutions
- Technical Documentation
- Installation Notes
- Installation
- Installation Jobs
- Using System Maintenance Aid
- Prerequisites
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- Migrating from Previous Versions
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- Step 3: Applying Problem Solutions
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Purpose and Limitations of this Release

The main purposes of this release are:

- integrate problem solutions; and
- utilize Natural 3.1 functions (catalogued under Natural 3.1).

Problem Solutions

Natural ISPF 2.4.2 is an SM level release and does not contain functional changes.

The following problems have been solved and integrated into this release (copied from SAG's support information system):

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PROBLEM 183921
-----< PROBLEM - DESCRIPTION >-----PROD./VERS.: ISP/241  ERRCODE:
NAT0933 OP-SYS.: OS/390
  STAT./ACTN.: F CORR/FIX / T TESTSOL
  SHORT-DESC.: NO GENERATION OF COMMAND PROCESOR
  (0),1.JUL.99,14:30,FHI
-----< SOLUTION-DESCRIPTION >-----
SHORT-DESC.: PROGRAM RESTOWED. APPLY NEW VERSION.
SOLU.-FIX   : IS24101
SRC-CHANGE  : ISP-NCPP

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Problem 184412                                     Line    1
-----< Problem - Description >-----
Prod./Vers.: ISP/241 ErrCode: NAT1305 OP-Sys.: MVS/ESA
Stat./Actn.: P ProdProb / A Active
Short-Desc.: NAT1305 in ISPNIN-P line 3980
  (0),16.Jul.99,11:43,FHI
Env.: NAT233 ISP231 MVS/ESA
Prb.: NAT1305 in ISPNIN-P line 3980 with function 'I'
More: cat date of ISPNIN-P 13.10.1997
      This happens only with objects of datsize > 9,99 MB
      *
      Very low priority
-----< Solution-Description >-----
Short-Desc.: Apply new modules ISPNIN*
Solu.-Fix   : IS24102

```

```

Problem 185428                                     Line    1
-----< Problem - Description >-----
Prod./Vers.: ISP/231 OP-Sys.: MVS/ESA
Stat./Actn.: P ProdProb / A Active
Short-Desc.: Librarian Lst update wrong format
  (0),18.Aug.99,11:02,FHI
E: Nat 233 under Cics, ISPF2.3.1, NPR214
P: After upgrade from ISP211 to ISP231.
When listing the versions of a librarian member
the 'LAST UPDATE' date will be shown in different
format: "yy/mm/dd-hhmmss" and "yyyymmdd-hhmmss"
-----< Solution-Description >-----
Short-Desc.: Apply new modules, mask corrected.
Solu.-Fix   : IS24103
Src-Changes: ISPLIN-P,ISPLLS-P,ISP5LS-P

```

Problem 185633	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: OS/390	
Stat./Actn.: P ProdProb / A Active	
Short-Desc.: No API supplies current sess no.	
(0),20.Aug.99,15:57,FHI	
User wants to write a program that can aid in converting Natural programs to new Natural version syntax. His problem is that he will call user exit 2024 from a random session (the programmer may be editing several Natural programs at the same time). How can the user find out what to put in the SES=nn parameter?	
-----< Solution-Description >-----	
Short-Desc.: Use API ISP-U008	
Long Desc.:	
The current session number is stored in the Natural ISPF Global Data Area.	
No user exit supplies this field.	
Therefore a new API similar to ISP-U000 (see Natural ISPF Programmer's Guide, Section 4) has been created which supplies global fields in addition.	
API program ISP-U008 has been introduced which is shipped as object code only and a sample program ISPU008P which shows how to use it.	
Src-Changes: ISP-U008 (NEW),ISPU008P (NEW)	

Problem 185873	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 ErrCode: NAT1143 OP-Sys.: OS/390	
Stat./Actn.: P ProdProb / A Active	
Short-Desc.: NAT1143 in ISPPIN-P line 3170	
(0),26.Aug.99,17:30,FHI	
Error: NAT1143 in ISPPIN-P line 3170 if an info screen of a load module is to be displayed.	
-----< Solution-Description >-----	
Short-Desc.: Apply new module ISPPIN-P, 29/02/2000 is checked now	
Src-Change : ISPPIN-P	

Problem 187376	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 ErrCode: NAT3148 OP-Sys.: OS/390	
Stat./Actn.: F Corr/Fix / C Closed	
Short-Desc.: NAT3148 in ISPNCR-P/2250	
(0),1.Oct.99,11:08,FHI	
changed by VKA on 6.Oct.99,12:12	
Compare of members (only Natural objects) fails with	
NAT3148 in ISPNCR-P/2250 dbid(4digit) Network-ID nnnnn	
currently not active(or available) if NAT version is > 22	
-----< Solution-Description >-----	
Short-Desc.: Apply new module ISP-LIBN and the new SECCCHK1 of UHE.	
(1),1.Oct.99,12:40,FHI	
Note: Prerequisite is Natural 2.3. because a new Natural Security module SECCCHK1 has to be used! This module will not be included in further Natural ISPF versions!	
Problem was that Natural ISPF expected another parameter set as SECCCHK1 returned.	
Solu.-Fix : IS24107	
Src-Change : ISP-LIBN	

Problem 188806	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: OS/390	
Stat./Actn.: P ProdProb / A Active	
Short-Desc.: Maint.of versions: GET UDATA:FREE	
(0),12.Nov.99,12:02,FHI	
In administrator function of Natural ISPF maintenance of versions is no more possible. 'ISP-GETG STAT UDATA: FREE' screen appears.	
Reason: ISPLS-P gets error NAT 933.	
-----< Solution-Description >-----	
Short-Desc.: Recatalog ISPLS-P	
Solu.-Fix : IS24108	
Src-Change : ISPLS-P	

Problem 183686	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: VSE/ESA	
Stat./Actn.: F Corr/Fix / C Closed	
Short-Desc.: Duplicated job number in power	
(0),28.Jun.99,10:22,FHI	changed by VKA on 10.Nov.99, 9:36
When the number of power listing is duplicated, only one listing can be visualized.	
-----< Solution-Description >-----	
Short-Desc.: ISP Solution and IBM Apars	
(1),10.Nov.99, 9:36,VKA	
Please apply provided ISP Solution and check the following IBM Apar list:	
-	
APAR	AFFECTS PTF DATE
DY44890	5686-06603-35C UD51066 26/07/99
DY44890	5686-06603-35G UD51068 26/07/99
DY45016	5686-06603-35C UD51066 26/07/99
DY45050	5686-06603-35C UD51066 26/07/99
DY45072	5686-06603-35C UD51066 26/07/99
DY45072	5686-06603-35G UD51068 26/07/99
DY45091	5686-06603-35C UD51066 26/07/99
DY45091	5686-06603-35G UD51068 26/07/99
DY45113	5686-06603-35C UD51066 26/07/99
DY45113	5686-06603-35G UD51068 26/07/99
DY45125	5686-06603-35C UD51076 26/07/99
DY45176	5686-06603-35C UD51066 26/07/99
DY45176	5686-06603-35G UD51068 26/07/99
Solu.-Fix : IS24109	
Src-Change : ISDJ-CHN	

Problem 190423	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: VSE/ESA	
Stat./Actn.: F Corr/Fix / T TestSol	
Short-Desc.: Allocate Sequential File	
(0),22.Dec.99,17:14,FHI	
the expiration date in file allocation map is not Y2K enabled.	
also the date is not honoured. after allocating a file the expiration date	
contains the actuell date.	
-----< Solution-Description >-----	
Short-Desc.: Use EXPIRATION-DATX for VSE, change map for MVS	
(1),22.Dec.99,19:13,FHI	
This solution utilizes a new field EXPIRATION-DATX for VSE. For MVS NPR has	
a fixed window technique anyway which uses a window from 1964 to 2063.	
This was done because under MVS the expiration date is used all over the	
file structure which would cause a high effort to change to real y2k	
technique. In the VSE routines this is not true, so EXPIRATION-DATX could	
be used easily.	
This has to be changed for the next version (after ISP242) as soon as	
ISP is catalogued under Nat31. Then we will use the sliding window techniqe	
of Natural to simplify y2k handling. This ISP version is still Nat228	
compliant.	
Solu.-Fix : IS24111	
Src-Changes: ISDDAL-P,ISDDAL-1,ISPDAL-P,ISPDAL-1	

Problem 193316	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: VSE/ESA	
Stat./Actn.: F Corr/Fix / O OK test	
Short-Desc.: VTOC digit missing, Year 2 digits	
(0),24.Mar.00,10:20,FHI	
When my customer does a LIST FIL in ISPF the RELAT/SIZE is missing the most	
significant digit. Here is an example:	
ISPF:	
LIST-FIL:*/VOLSER=FST902 ----- Row 0 of 17 - Columns	
COMMAND===>	
DATA SET NAME	
RELAT/SIZE DO	
** ***** top of list *****	
** FREE SPACE **	
RELSE.DELETE.PLOG.COPY	
** FREE SPACE **	
Z9999994.VSAMDSPC.TB2BAEA1.T44869DC	
Z9999992.VSAMDSPC.TB2BAEA1.TCE15F98	
** VTOC EXTENT **	
VSE.GENERAL.LIBRARY	
The 6575 in the 3rd last line should be 16575.	
The output from ICCF is correct:	
VOLUME: FST902 ADDRESS: 144	
TYPE: 3390	
BEGIN END NUMBER	
CYL TRK CYL TRK OF TRACKS	
*** FREE EXTENT ***	
RELSE.DELETE.PLOG.COPY	
*** FREE EXTENT ***	
Z9999994.VSAMDSPC.TB2BAEA1.T44869DC	
Z9999992.VSAMDSPC.TB2BAEA1.TCE15F98	
*** VTOC EXTENT ***	
He has applied zap XC21062 for another vtoc problem.	
-----< Solution-Description >-----	
Short-Desc.: Extend listing, introduce 4 digit year	
Solu.-Fix : IS24113	
Src-Changes: ISDDL-S-P,ISDDL-S-L	

Problem 193556	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: OS/390	
Stat./Actn.: P ProdProb / A Active	
Short-Desc.: Incorrect dates in PDS memb. info	
(0),31.Mar.00,15:37,FHI	
PDS memeber information shows incorrect dates:	
1994-05-10 is displayed as 2094-05-10 without YSLW, and as 1994-05-10 with	
YSLW=55. Dataset used is RZDBA.PARMLIB, environment: DAEF, natural: 234, 312	
-----< Solution-Description >-----	
Short-Desc.: Convert 'date-modified' in info screen correctly	
Solu.-Fix : IS24114	
Src-Changes: ISPPIN-P,ISP-YJAN (NEW)	

Problem 186304	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: MVS/ESA	
Stat./Actn.: P ProdProb / A Active	
Short-Desc.: Edit more then one user profile	
(0),8.Sep.99,11:55,FHI	
ISP241	
NSC233	
* After the command LIST USER * several users are selected with the	
'E' linecommand.	
* When the first user is modified PF3 is depressed to save the changes.	
(example: the Value of main menu field in the A-Profile is changed	
for every user)	
* The EDIT-USER frame from the second selected user is displayed.	
* Enter is depressed to take to take the A-Profile for the second user	
then messages 'User xxxxx updated' appears, where xxxxx is the name of the	
first user profile just updated before. This Message can't be cleared.	
* Circumvention: each user must be selected one after the other from	
the LIST USER list.	
-----< Solution-Description >-----	
Short-Desc.: Suppress msg 6906 if authorization profile changed	
Solu.-Fix : IS24115	

Problem 194325	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: OS/390	
Stat./Actn.: P ProdProb / A Active	
Short-Desc.: NAT0936 using user exit ISP-SUSU	
Solution: Param 2 length changed from 50 to 128.	

Problem 169910	Line 1
-----< Problem - Description >-----	
Prod./Vers.: ISP/211 OP-Sys.: OS/390	
Stat./Actn.: P ProdProb / A Active	
Short-Desc.: Free space is only 2 digits	
(0),24.Mar.98,11:35,FHI	
If a NATURAL object is edited and Esize >= 100k	
the free space status of SAG editor's message line shows 0.	
-----< Solution-Description >-----	
Short-Desc.: Extend free space display	
Solu.-Fix : IS24117	
Src-Change : ISP-BRWS	

PROBLEM 183905	LINE 1
-----< PROBLEM - DESCRIPTION >-----	
PROD./VERS.: ISP/241 OP-SYS.: MVS/ESA	
STAT./ACTN.: P PRODPROB / A ACTIVE	
SHORT-DESC.: ACTIVATE NATURAL CONNECTION	
(0),1.JUL.99,10:52,AZE	
WOULD BE NICE IF ISP COULD PERFORM 'SET CONTROL +' IS USER	
WANTS TO IMPORT OR EXPORT FROM/TO PC.	
IF USER SELECTS PC AND NATURAL CONNECTION IS NOT ACTIVED	
USER HAS TO SET (PERCENT)+.	
SET CONTROL + DOES NOT GIVE 1172 MESSAGE IF IT IS USED IN	
NAT PROGRAM SO THERE IS NO ERROR HANDLING NECESSARY.	
-----< SOLUTION-DESCRIPTION >-----	
SHORT-DESC.: ISSUE SET CONTROL '+' BEFORE ACCESSING PCC	
SRC-CHANGES: ISP-SEPC,ISP-SE2P,ISP-SE3P,ISP-SE4P	

Problem 171960	Line
-----< Problem - Description >-----	
Prod./Vers.: ISP/211 OP-Sys.: MVS/ESA	
Stat./Actn.: F ProdProb / C Closed	
Short-Desc.: Browse SO display truncated	
(0),29.Jun.98,17:04,FHI	
E Natural ISPF 212, also N-ISPF 231, 240	
P using the BROWSE command, if JL data is displayed first, the SO data	
is truncated in the display to 80 characters if screen model >2	
(can be reproduced on model 5 emulation).	
Cause:	
Probably screen length too small in editor.	
-----< Solution-Description >-----	
Short-Desc.: Calculate screen length from physical length on PF8	
Solu.-Fix : IS24119	
Src-Change : ISP-BRWS	

Problem 194573	Line
-----< Problem - Description >-----	
Prod./Vers.: ISP/241 OP-Sys.: OS/390	
Stat./Actn.: F Corr/Fix / O OK test	
Short-Desc.: Wrong module shown	
(0),20.Apr.00,15:18,FHI	
A PO dataset is cataloged on one volume 'A', and a different dataset with	
same name is stored on volume 'B' without catalog entry.	
The info screen of a PDS member shows the module of the cataloged dataset,	
even if VOLSER 'B' has been entered as search parameter.	
If the non-cataloged dataset on volume 'B' is to be deleted, and the	
'DELETE CATALOG' option is set to 'YES', ISPF will delete the catalog	
entry of the cataloged dataset, and the contents of the	
non-cataloged dataset.	
-----< Solution-Description >-----	
Short-Desc.: Check file attributes correctly even if no cat entry.	
(1),16.May.00, 9:08,FHI	
Check file attributes correctly. If a dataset is not cataloged, do not	
offer option 'DELETE CATALOG'.	
Solu.-Fix : IS24121	
Src-Changes: ISPPIN-P,ISP-FIAN	

Technical Documentation

With the release of Version 2.4.3, the following documentation is available:

Manual	Order Number
Installation and Administration	ISP241-010ALL
User's Guide	ISP241-020ALL
Programmer's Guide	ISP241-025ALL
Software AG Editor documentation	EDT226-030ALL

Installation Notes

- Natural ISPF 2.4.2 requires Natural Version 3.1.2 or above.
- If Predict is installed, Version 3.4 or above is required.
- If Natural VSAM is installed, Version 2.4.4 or above is required.
- If Entire System Server is installed, Version 2.2 or above is required.
- If Adabas is installed, Version 6.2.3 or above is required.
- Entire System Server Interface (ESX) is now integrated into the Natural nucleus and is no longer an extra product. Installation Steps 8, and 9 of the Section Installation of the Natural ISPF Installation Documentation do not apply any longer.

Refer to **Natural 2.3.4 Release Notes** for detailed information about which ESX modules have to be linked and which ESX Include statements are required to relink Natural.

For changed installation refer to the installation subsection.

- Operating systems supported:
 - OS/390 Release 2.4 and above
 - VSE/ESA Version 1.4.4 and above
 - BS2000/OSD Version 2 and above
 - VM/ESA CMS
- You will find recommended zaps depending on the operating system environment in members ...ZAP in the source library of the supplied tape.

Installation

This section describes installation procedures for Natural ISPF under the operating systems MVS (including OS/390), VSE/ESA, VM/CMS and BS2000/OSD.

Warning:

If you are migrating from a previous version of Natural ISPF, **be sure** to refer to the section Migrating from Previous Versions.

Installation Jobs

The installation of Software AG products is performed by installation **jobs**. These jobs are either created 'manually' or generated by System Maintenance Aid (SMA).

For each step of the installation procedure described in this documentation, the job number of a job performing the corresponding task is indicated. This job number refers to an installation job generated by SMA. If you are not using SMA, an example installation job of the same number is provided in the installation job library on the Natural ISPF installation tape; you must adapt this example job to your requirements. Note that the installation job numbers on the tape are preceded by a product code (for example, ISPI061).

Using System Maintenance Aid

Information on using Software AG's System Maintenance Aid (SMA) for the installation process is provided by the **System Maintenance Aid Documentation**.

Prerequisites

The following Software AG products must be installed at your site as a prerequisite for Natural ISPF:

- Natural Version 3.1.2 or higher, including the Software AG Editor.
- Entire System Server (formerly NATURAL PROCESS) (optional):

All platforms: Version 2.2 or higher.

- If VSAM files are used: Natural VSAM Version 2.4.4 or higher (optional).
- For an initial installation using Adabas system files, Adabas Version 6.2 or higher is required.
- If Predict is installed, Version 3.4 or higher is required.

Contents of the Installation Tape

The installation tape contains the following files:

OS/390 Tape:

Tape file name	Disk cylinder	Disk type	Description
ISPnnn.JOBS	1	3380	Natural ISPF installation jobs
ISPnnn.INPL	24	3380	Natural ISPF programs
ISPnnn.ERRN	1	3380	Natural ISPF error messages
ISPnnn.LOAD	1	3380	Natural ISPF load modules
ISPnnn.SRCE	1	3380	Natural ISPF sources and examples
ISPnnn.SYS1	1	3380	Natural ISPF empty versioning file
ISPnnn.SYS2	1	3380	Natural ISPF empty container file
ISPnnn.DATA	1	3380	Natural ISPF Predict file descriptions
ISPnnn.VINI	1	3380	Natural ISPF VSAM init file

VSE/ESA Tape:

Tape file name	Disk cylinder	Disk type	Description
ISPnnn.INPL	24	3380	Natural ISPF programs
ISPnnn.ERRN	1	3380	Natural ISPF error messages
ISPnnn.LIBR	1	3380	Natural ISPF sources, jobs (including installation jobs, load modules)
ISPnnn.SYS1	1	3380	Natural ISPF empty versioning file
ISPnnn.SYS2	1	3380	Natural ISPF empty container file
ISPnnn.DATA	1	3380	Natural ISPF Predict file descriptions
ISPnnn.VINI	1	3380	Natural ISPF VSAM init file

CMS Tape:

Tape file name	Disk cylinder	Disk type	Description
ISPnnn.INPL	24	3380	Natural ISPF programs
ISPnnn.ERRN	1	3380	Natural ISPF error messages
ISPnnn.TAPE	1	3380	Natural ISPF sources, jobs, load modules
ISPnnn.DATA	1	3380	Natural ISPF Predict file descriptions

BS2000/OSD Tape:

Tape file name	Disk cylinder	Description
ISPnnn.ERRN	192	error messages
ISPnnn.JOBS	192	installation jobs
ISPnnn.INPL	7800	programs
ISPnnn.PAMS	27	load modules
ISPnnn.SYS1	33	empty versioning file
ISPnnn.SYS2	33	empty container file
ISPnnn.DATA	96	Predict file descriptions

Migrating from Previous Versions

Migrating Version Data

As of Natural ISPF Version 2.3, a new logical format of the versions file is used. No Adabas FDT or VSAM structure must be changed. Migration has to be done within the file. Any upgrade from a version below 2.3.1 requires migration. No migration is required if Natural ISPF is upgraded from Version 2.3.1 or 2.4.1.

Migration can be done with SMA Job I200 Step 2005. At startup time, Natural ISPF checks for old version records. If migration has not executed or only in part, versioning is disabled.

See installation Step 11: Loading / Migrating the Natural ISPF Versions File for details.

Important Aspects of the Installation Procedure

1. Check whether you have used any Natural ISPF exits which were loaded into library SYSISPX. If this is the case, you must make sure that your modified source is copied to another library. If you have not already done so, do it before installing the new version, since an INPL of Natural ISPF overwrites all programs in SYSISPX.
2. Before installing the new version, you must delete some existing programs and data. Delete the following:

Library Name	Programs
SYSLIB	All objects with prefix IS (IS*) and SAT (SAT*). These must be deleted online.
SYSISPS1	All members (*). Job I051, Step 2000 can be used to delete this library in batch mode (or Step 2001 for VSAM system files).

3. Some internal data structures have been changed in Version 2, compared with earlier versions. In particular, the field SESSION-DATA has been extended from 128 to 200 bytes. This field is used in some of the user exits as well as in Open NSPF subprograms which implement new objects. Here the field is called OPERATION-DATA.

If Natural ISPF must not be executed without your user exits (e.g. because of user authorization which is checked in exits), the following sequence of steps is recommended:

- **When migrating from versions lower than 2.1.1:**
 1. Load system programs and error messages as described in this documentation. Natural ISPF will not be available for anyone until successful completion of the installation process.
 2. Adapt your user exits, Open NSPF subprograms and workfile usage.
 3. Continue the installation as described in this documentation.
- **When migrating from Version 2.1.1 or 2.1.2:**

The relevant internal data structures have not changed since Version 2.1.1. Therefore, no modifications of your user exits and other subprograms are necessary. If all your user exits, Open NSPF subprograms and workfile-accessing exits reside in the same library, these will be copied to the library SYSLIB by the INSTALL program (see Step 14). Otherwise, you must copy them to SYSLIB manually after performing the INPL (see Step 2).

Migrating from Versions Lower Than 2.1.1

Adapting User Exits

All fields from previous Natural ISPF versions can still be found in the SESSION-DATA and all data areas which contain the object-specific redefinition of SESSION-DATA, but the field offsets may have changed and new fields have been added.

Assuming your exit sources are stored in the library SYSISPXU, you must perform the following steps to adapt your exits:

1. Delete all data areas with names like ISxx---L from the library SYSISPXU.
2. If Natural Security is installed in your environment, define SYSISPX as STEPLIB for the library SYSISPXU. Otherwise, copy all parameter data areas with names like ISxx---L from the library SYSISPX to the library SYSISPXU.
3. Change the field SESSION-DATA to the new format and length (A200). You can use the Natural Scan/Replace utility for this function.

4. Recompile your exits.
5. Copy to SYSLIB will be performed by the INSTALL program (see Step 14: Required Interfaces to other Software AG Products).

Adapting Open NSPF Subprograms

If you have used Open NSPF to implement user defined objects, you must perform the following steps to adapt your subprograms:

1. Change the field OPERATION-DATA to the new format and length (A200).
2. Recompile your subprogram.
3. Copy the compiled subprogram to the library SYSLIB.

Workfile Usage

Export/Import PC was using Workfile 5 for PC access. This has been changed to Workfile 7. If another workfile is needed at your site, modify the following exits accordingly:

```
ISP-DLBU  ISP-SECU
  ISP-SEPU  ISP-SE2U  ISP-SE3U  ISP-SE4U
  ISP-SIMU  ISP-UPBU
```

When you have finished, recompile your exists and copy them to the library SYSLIB.

Adapting Menu Definitions

Note:

This procedure can also be performed after installation of Natural ISPF.

The menu structure has been changed to incorporate new functions and objects. If you have modified any of the menus in the list below, you should apply the changes to the new menus distributed by Software AG:

ALL, MAIN, CNFG, PROF, ADMN

To integrate your changes, proceed as follows:

1. LIST all menus (direct command LIST MENU *).
2. If any of above mentioned menus is of type USER, continue and repeat for each menu:
 - COPY the menu x temporarily to another library, you can use the command COPY NAT SYSISPFU(MENUX),
 - DELETE the menu of type user from the list. This reactivates the menu supplied by Software AG.
 - EDIT the menu and integrate your changes.

Further Aspects

- The Global Data area used by Natural ISPF has been extended by 1600 bytes. If you were editing Natural programs which are very close to the ESIZE limit, increase the parameter ESIZE by 2K.
- Usually Natural ISPF Entry Panels contain the data which was entered when the Entry Panel was last used. Since the structure of the data has been changed, data created by versions prior to 211 is ignored and the Entry Panel is empty when it is invoked for the first time.
- Incore database container record formats have been changed. This change is upwardly compatible, i.e. new IDB programs can read old data, but container files written by new IDB programs cannot be retrieved by old IDB programs delivered with Natural ISPF Version 1.4.x (an attempt to do so would cause message texts such as Invalid Format or Object not found to be displayed). This may happen if you have 2 different environments accessing the same container file. For this reason, if you intend to use old and new versions in parallel, you are advised to create and use a separate container file for the new environment.

Step 1: Copying the Tape Contents to Disk

To load the Natural ISPF installation tape, proceed as follows:

For OS/390:

Step 1

If you are not using SMA, copy the job data set ISPnnn.JOBS from tape to disk using the sample JCL below. The following values must be supplied in the JCL:

- In the data set names, replace *nnn* with the current version number of the data sets.
- With the SER parameter, replace XXXXXX with the volume serial number of the tape.
- With the LABEL parameter, replace *x* with the sequential number of the tape data set (see Report of Tape Creation).
- With VOL=SER parameter, replace YYYYYY with the volume serial number of the disk pack.

```
// JOB CARD
//V2COPY EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=A
//IN1 DD DSN=ISPnnn.JOBS,DISP=OLD,UNIT=TAPE,
// VOL=(,RETAIN,SER=XXXXXX),LABEL=(x,SL)
//OUT1 DD DSN=SAGLIB.ISPnnn.JOBS,DISP=(NEW,CATLG,DELETE),
// UNIT=SYSDA,VOL=SER=YYYYYY,SPACE=(CYL,(2,1,10))
//SYSIN DD *
C I=IN1,O=OUT1
/*
```

Then adapt and run job ISPTAPE from the job data set to copy the load and source libraries from tape to disk. The sample jobs use the sequential data sets from tape directly.

The data set type and the space each data set requires on disk are shown in the Report of Tape Creation.

For VSE/ESA:

The sample JCS supplied on tape for the installation of Natural ISPF assumes one library (SAGLIB).

Copy the sublibrary containing the sample installation jobs from tape using the following JCS:

```
* $$ JOB JNM=RESTORE,CLASS=0,DISP=D,LDEST=*
* $$ LST CLASS=A,DISP=D
// JOB RESTORE
// ASSGN SYS005,IGN
// ASSGN SYS006,CUU,VOL=xxxxxxx
// MTC REW,SYS006
// MTC FSF,SYS006,nn * For the value of nn, see the tape report
* *** Now process ISPnnnJ.LIBR - JOBS ***
// EXEC LIBR,PARM='MSHP'
RESTORE SUB=SAGLIB.ISPnnn:SAGLIB.ISPnnn -
SAGLIB.ISPnnnJ:SAGLIB.ISPnnnJ -
TAPE=SYS006 -
LIST=YES -
REPLACE=YES
/*
/&
* $$ EOJ
```

For CMS:

1. To position the tape for the TAPE LOAD command, calculate the number of tape marks as follows: if the sequence number of ISPnnn.TAPE, as shown by the Report of Tape Creation, is n , you must position over $3n-2$ tape marks (that is, FSF 1 for the first data set, FSF 4 for the second, etc.).
2. Access the disk that is to contain the Natural ISPF installation files as disk A. The size of the disk should be at least 500 1-KB blocks, for example, 2 cylinders on 3330-type disks, or 1 cylinder on 3350- or 3380-type disks.
3. Ask the system operator to attach a tape drive to your virtual machine at address X'181' and mount the Natural ISPF installation tape.
4. Position the tape by issuing the CMS command:

```
TAPE FSF fsfs
```

where fsfs is calculated as described above.

Load the Natural ISPF/CMS installation material by issuing the CMS command:

```
TAPE LOAD * * A
```

You may wish to keep the tape drive attached to your virtual machine, because the tape will still be needed in further steps of the installation procedure.

For BS2000/OSD:

If you are not using SMA, copy the data sets from tape to disk using the procedure described below. In this procedure, the following values must be supplied:

- In the data set names, replace *nnn* with the current version number of the data sets.
- Replace all *xxxxxx* with the volume serial number of the tape.

Step 1

Copy the job data set ISPnnn.JOBS from tape to disk using the BS2000/OSD utility PERCON or EDT.

If you use PERCON, issue the following commands:

```
/FILE ISPnnn.JOBS,VOL=xxxxxx,DEV=T9G -
/      ,BLKSIZE=,RECSIZE=,RECFORM=,FCBTYPE= -
/      ,STATE=FOREIGN,FSEQ=???,LINK=PCIN
/FILE P.ISPnnn,LINK=PCOUT
/EXEC PERCON
END
```

If you use EDT, issue the following commands:

```
/FILE ISPnnn.JOBS,VOL=xxxxxx,DEV=T9G -
/      ,BLKSIZE=,RECSIZE=,RECFORM= -
/      ,STATE=FOREIGN,FSEQ=???,LINK=EDTSAM
/EXEC EDT
@ READ '/'
@ SY '/REL EDTSAM'
@ WRITE 'P.ISPnnn'
@ HALT
```

Step 2

Then issue the following command:

```
/CALL P.ISPnnn,PRODUCT=ISPnnn
```

An example job library LIB.ISPnnn is created from the procedure data set.

Step 3

Adapt job E.ISPTAPE from the example job library.

Then issue the following command to run the job, which copies all data sets from tape to disk:

```
/E LIB.ISPnnn(E.ISPTAPE)
```

Step 2: Loading System Programs and Error Messages

Load files ISPnnn.INPL and ISPnnn.ERRN. They load the following Natural libraries:

Natural Libraries	Description
SYSLIB	Natural ISPF Programs
SYSISPE	Natural ISPF Examples
SYSISPH1	Natural ISPF Help Data
SYSISPS1	Natural ISPF Internal Menus/Tables
SYSISPX	Natural ISPF User Exit Sources
SYSISPXC	Natural ISPF Exit Sources for Com-plete
SYSERR	Natural ISPF Error Messages
SYSISPI	Natural ISPF Interfaces
SYSISPDB	Natural ISPF Incore Database Modules
SYSLIBS	Natural ISPF Incore Database Modules

For OS/390, VSE/ESA, BS2000/OSD - Job I061

Load the files using Job I061, Steps 2000 (INPL) and 2001 (ERRN).

For CMS

Load the files by running the procedure ISPINPL EXEC.

Note for All Platforms

While the above job is running, Return Code 5500 or 828 may be issued. This is because security entries are made, and the job name may not be authorized to make all entries at your site. If this happens, run program INTISPS1 in library SYSTEM in Online Natural to ensure all security entries are made.

Step 3: Applying Problem Solutions

Note:

This step is not needed for Natural ISPF 2.4.2.

Step 4: Loading Predict Data

Note:

This step must be skipped if you are using a Natural VSAM system file.

All Natural ISPF files used in Incore Database examples are documented in Software AG's repository Predict. The ISPnnn.DATA data set on the installation tape contains these Predict data that can be loaded with the MIGRATE utility in Predict. This is optional.

You can omit this step if you have already loaded the Predict data during a preceding installation of Natural ISPF Version 2.x.x, since there are no differences between the Predict data delivered with Versions 2.1, 2.3 and 2.4.

The MIGRATE utility is described in the **Predict Reference Documentation**. Use Job I200, Step 2000 to load the file.

Note:

The Predict MIGRATE utility may issue warning message IC2629, indicating that different fields are using the same Adabas short names. You can ignore this message. You can also ignore the message: Attribute OPSYS lost.

For CMS:

Modify ISPDATA to suit your environment and run the ISPDATA EXEC.

Step 5: Modifying Natural Front-end Modules - BS2000/OSD only: Job I070

Front-end Requirements

There are no special requirements for the Natural TIAM driver (ANRTRFRNT). However, it is recommended that you use the following definitions:

Definition	Description
CURPRO=ON	This is the default.
PFK=KN	Recommended if all connected terminals are type 9756 or above.
PFK=KS	Recommended in all other cases.

See also the section Setting the Dynamic Natural Parameters.

If you wish to modify the NATTIAM parameters, edit and reassemble the Natural TIAM driver source ANRTRFRNT using Job I070.

Natural UTM Driver

The following requirements concerning the Natural UTM driver (ANUTFRNT) must be satisfied:

Requirements	Description
ADACALL=name	Recommended (not NO)
CDYNAM=10	Minimum value
CURPRO=ON	This is the default
PFK=KN	Recommended if all connected terminals are type 9756 or above.
PFK=KS	Recommended in all other cases.

See also the section Setting the Dynamic Natural Parameters.

If you wish to modify the NATUTM parameters, edit and reassemble the Natural UTM driver source ANUTFRNT using Job I070.

Step 6: Modifying the Online Natural Parameter Module

Check the NATPARM module to see if it contains the following definitions. If not, add them:

Definitions	Description
SSIZE=64	Editor area.
ASIZE=50	Entire System Server area also required for IDB.
DATSIZE=56	Recommended size of Local Data Buffer; minimum size required is 48.
CDYNAM=10	Minimum value.
CSTATIC=(... , NATPM, ...)	Optional setting. Required only if Incore Database applications make use of Natural's inverse direction display facility (for example, for use in Middle Eastern countries) (see Natural ISPF Administration Documentation, Section User Exits)
SYNERR=ON	Trap syntax errors.
MAXCL=0	Recommended.
MADIO=0	Recommended.
LE=OFF	Limit error (see Natural Administrator's Documentation for details).
RECAT=OFF	To allow stow of macros.
NTPRINT=(...)	Define at least printer 1 and 2 (see Natural Operations Documentation). Note that if no printer can be accessed, the functions WORKPOOL and BROWSE-VIEW are not available.
NTFILE ID=186,DBID=n,FNR=m	Definition of container file. If a VSAM container file is used, PASSW=ISPC must be added to this statement.
NTFILE ID=205,DBID=n,FNR=m, PASSW=passw	Definition of versioning file. Required if Adabas versioning file is to be password-protected or a VSAM versioning file is used. If VSAM, specify PASSW=ISPV.
NTDB PROCESS,148 *	Mandatory Entire System Server node.
NTDB INCORE,147	Definition of incore database **

* These definitions are required **only** if the Entire System Server (formerly NATURAL PROCESS) is installed. Note also that the NTDB definitions must always be at the end of the NATPARM module. It is important that even if your Entire System Server default node ID is different from 148, the entry NTDB PROCESS 148 has to remain unchanged here.

** All Incore Database examples use this DBID. If 147 cannot be used at your site, all Incore Database DDMs (ISP-IDB*) must be recataloged with the new value specified here. All Incore Database example programs (IDB* and VER* in the example library) must also be recataloged accordingly.

If the specified SSIZE value is not available when Natural ISPF is invoked, no Natural ISPF command is accepted (the message Invalid command appears). If this happens, check whether SSIZE is available using the Natural command BUS.

Notes:

1. If the IMPORT/EXPORT PC functions are to be used with Entire Connection (formerly Natural Connection), Workfile 7 must be assigned to PC or PC3 (for example, NETWORK (7),AM=PC for Natural 3.1). The default Workfile 7 can be modified (see the description of the Import/Export Exits in the Natural ISPF Administration Documentation, Section User Exits).
2. Use the NTPRINT macro to define at least Printers 1 and 2 (see the Natural Installation and Operations Documentation).
 - If you specify NTPRINT (1,2),AM=OFF or the equivalent PRINT=OFF, the WORKPOOL and BROWSE-VIEW functions are not available. Of course, you can also specify the printer definitions online using the PRINT parameter which can complement or override the NTPRINT definitions.
 - You can specify any access method of your choice, but when using Natural ISPF in an online environment, you should specify the options OPEN=ACC, CLOSE=OBJ (it may be acceptable for batch environments to use the options OPEN=INIT, CLOSE=FIN).

For OS/390, VSE/ESA, BS2000/OSD - Job I080:

Reassemble and link the NATPARM module when modified (JCL is contained in member NATI080 in the Natural installation job library).

For CMS:

Enter the commands:

```
GLOBAL MACLIB NATnnn
ASSEMBLE NATPARM
```

where *nnn* stands for the appropriate Natural version.

Step 7: Modifying Natural VSAM Parameters

Note:

Only required if Natural VSAM system files are used.

Set parameter KEYLGH in macro NVSPARM to 126. Then reassemble and link the macro using Job NVSI055, Steps 1400 and 1401. This job can be found in library NATnnn.JOBS or NVSnnn.JOBS.

Step 8: Assembling the Parameter Modules for the ESX Component

Please refer to the Natural 2.3.4 Release Notes or subsequent documentation to install the ESX component. It is part of the Natural nucleus.

Step 9: Linking the Gateway Modules for the ESX Component

Please refer to the Natural 2.3.4 Release Notes or subsequent documentation to install the ESX component. It is part of the Natural nucleus.

Step 10: Relinking Natural with Natural ISPF

Natural ISPF under OS/390, VSE/ESA or BS2000/OSD:

Please refer to the Natural 2.3.4 Release Notes or subsequent documentation to link the ESX component. It is part of the Natural nucleus.

Natural ISPF itself needs in addition to the ESX installation an include statement which is a utility for TSO and Batch nuclei only. Enter a statement in your link job, where the syntax depends on the needs of your operating system:

INCLUDE ISPURT1

Modules required if Natural VSAM system files are used (from Natural VSAM library):

Link Job	Description
INCLUDE NVSPARM	Natural VSAM parameter (see Step 7)
INCLUDE NVSISPV	Natural VSAM versioning file access
INCLUDE NVSLIB	Natural VSAM container file access

Note:

If you are using a shared Natural nucleus, all modules can be linked to the shared nucleus.

Natural ISPF under VM/CMS:

Assuming your ESX modules are in a library called NATLIB, and the Natural ISPF load library is referenced by ISPLIB, modify the variable LOADLIST in NAT\$LOAD EXEC to include the following modules:

Library	Module	Explanation
ISPLIB	ISPURT1	Utility.

Modules required from Entire System Server Interface:

Library	Module	Explanation
NATLIB	NATPNIP	Entire System Server Interface parameters
NATLIB	ESXNUC *	ESX nucleus

Step 11: Loading / Migrating the Natural ISPF Versions File

The Natural ISPF versions file is used to store "update decks" for edited Natural, PDS members and VSE/ESA members. This means that if versioning is active, previous versions of these object types are kept when selected for editing and can be retrieved.

Note:

For Natural objects: this applies only to objects that are maintained using the Software AG Editor, that is, maps and data area objects cannot use versioning.

You can use an Adabas file or a VSAM file as versions file.

Loading a Versions File

Follow these instructions, if you do not yet have a versions file. If you already have one, skip to Migrating a Versions File.

Adabas Versions File

Load the empty Natural ISPF versioning file (data set `ISPnnn.SYS1`) using the ADALOD utility. This file was created with Adabas version 6. All versioning data is stored in this file. The ADALOD parameter `ISNREUSE` must be set to YES:

```
ISNREUSE=YES
```

The file number of the versions file can be freely chosen and must be entered in the Natural ISPF parameter screen of the configuration option.

See the Natural ISPF Administration Documentation, Section System Configuration, subsection Natural ISPF Parameters.

If the versions file is to be protected by an Adabas password, the password must be defined to Natural using the following NTFILE macro:

```
NTFILE ID=205,DBID=n,FNR=m,PASSW=password
```

If you use this option, the definition in the Natural ISPF parameters is ignored.

For OS/390, VSE/ESA, BS2000/OSD - Job I050 step 2000:

Additional parameters can be found in Job I050, Step 2000.

For CMS:

Additional parameters can be found in `ISP23SY1 LODLIB`.

VSAM Versions File - OS/390 and VSE/ESA only

1. Add the following statement to the Natural parameter module:

```
NTFILE ID=205, DBID=n, FNR=m, PASSW=ISPV
```

where:

n is any VSAM DBID

m is any number

ISPV is DD(FCT,DLBL) name of the VSAM file.

2. The module NVSISPV must be linked to the Natural for VSAM nucleus.

If you wish to use a VSAM file as versions file, sample JCL for defining the VSAM cluster can be found in Job I008, Step 2000.

3. Natural for VSAM parameter KEYLGH must be set to 126 (minimum value).
4. The file must be initialized by loading the dataset ISPnnn.VINI with VSAM repro.
See Job I008, Step 2001.

Under CICS

If you are defining a VSAM versions file under CICS, add an FCT entry. For an example, see Job I005, Step 2203.

Under Com-plete

If you are defining a VSAM versions file under Com-plete, catalog the VSAM versions file as follows:

- Under Com-plete 4.5, use the FM function of the UUTIL utility, and add the card:

```
DDN=ISPV, VS, R, U, A, MACR=(SEQ, DIR, KEY, SKP, NSR), MRPL=8
```

- Under Com-plete 4.6 and higher, use the CA function of the UFILE utility, and add the card:

```
DDN=ISPV, VS, R, U, A, MACR=(SEQ, DIR, KEY, SKP, NSR), MRPL=8
```

You must also add the appropriate DD cards to the Com-plete startup procedure. For example:

```
ISPV DD SAGLIB.VSAM.ISPVERS, DISP=SHR
```

Under TSO

If you are defining a VSAM versions file under TSO, add the following statement to your CLIST for Natural:

```
ALLOC F(ISPV) DA('SAGLIB.VSAM.ISPVERS') SHR
```

Migrating a Versions File

An existing versions file that has been used by a Natural ISPF version lower than 2.3.1 (even by Version 2.3.0) has to be migrated to the new record format. This can be done by SMA Job I200, Step 2005 for operating systems OS/390, VSE/ESA and BS2000/OSD (for CMS, use ISPFMIG EXEC). This job runs the program ISPFMIG which is located in library SYSISPI. Specify the database and file numbers of your versions file as parameters in these example jobs. For VSAM version files, do not forget to add the DD statement in your migration job.

ISPFMIG can also be started in online mode. However, in this case the program checks only the specified versions file for old records and does not translate these records into the new logical structure. To execute the check for old records, logon to SYSISPI and type ISPFMIG in the Natural command line. Or type NAT ISPFMIG in the Natural ISPF command line.

The program ISPFMIG will temporarily change the LFILE definition to check the file. You can restart this utility in batch mode without loss of data. Old records will be converted into the new format within your versions file. Do not use copies of this file with existing version data. Any versioned SAVES accessing the wrong versions file will cause version mismatches and loss of some versions. Instead, for backup reasons unload your Adabas versions file to a sequential dataset or copy your VSAM versions file before executing this utility. Restore it only in case of ISPFMIG migration errors. If you receive Adabas Response Code 47 during migration, parameter NISNHQ (Adabas cards) should be set to NISNHQ=60.

If you intend to use two or more different environments running different versions of Natural ISPF, you should keep the following in mind:

- If two environments provide access to identical data (for example, FUSER and FNAT files or PDS libraries), they should share a common versions file.
- After migration, it is impossible to access member versions from an environment using the old program logic, as contained in releases of Natural ISPF lower than 2.3.1. However, you can enable such an environment to access the migrated versions file:

Natural ISPF 2.3.1 supplies a subprogram ISP-TVKN in the SYSISPI library. To access a new versions file from an environment running Natural ISPF 2.1.x, use SYSMAN to copy the module to the SYSLIB library in which Natural ISPF 2.1.x is installed.

Notes:

1. After copying, it is no longer possible to access an old versions file.
2. If you intend to switch between the old and the new access method, remember to save the old ISP-TVKN module in SYSLIB, otherwise you will have to restore the old module.

ISPFMIG displays the following startup screen:

```

*****
*   N S P F      MIGRATION      *
*   2 . 4 . 2    UTILITY        *
*****

Migrates versioning file from earlier format to version 2.4 format.
This utility can only be started in batch mode. Running online it will
check the versioning file for old records only. No FDT changes are required.

You can restart this utility in batch mode without loss of data. Old records
will be converted into the new format within your versioning file. Don't use
copies of this file with existing versioning data. Any versioned SAVES
accessing the wrong versions file will cause version mismatches and loss of
some versions. Instead, unload your versioning file to a sequential dataset
before executing this utility and reload it in case of errors.

After migration it is impossible to access member versions from ISP earlier
than 2.3.1. However, it is possible to access the data from ISP21x, just apply
the solution shipped with ISP242.

Versioning file DBID:           File number:           Old records:

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
END

```

Enter the database and file numbers of your versions file. ISPFMIG will show the number of old records. After you have pressed PF3, the original settings of the versions file are restored.

Note:

If you interrupt the program (for instance by typing terminal command '% %'), be aware that the current input of dbid / file number has been changed. In this case, you should re-initialize the Natural ISPF session.

Step 12: Loading the Natural ISPF Container File

The Natural ISPF container file can be used to store Incore Database Files, which can then be retrieved and manipulated in the Incore Database.

You can use an Adabas file or a VSAM file as container file.

Adabas Container File

Omit this step if you already have a Natural ISPF container file.

Load the empty Natural ISPF container file (data set ISPnnn.SYS2) using the ADALOD utility. This file was created with Adabas Version 6. All Incore Database data is stored in this file. The ADALOD parameter ISNREUSE must be set to YES:

```
ISNREUSE=YES
```

The file number of the container file can be freely chosen and must be defined using the NTFILE parameter in the NATPARAM module.

If the container file is to be protected by an Adabas password, the password must be defined to Natural using the following NTFILE macro:

```
NTFILE ID=186,DBID=n,FNR=m,PASSW=password
```

For OS/390, VSE/ESA, BS2000/OSD - Job I050 Step 2001

Additional parameters can be found in Job I050, Step 2001.

For CMS

Additional parameters can be found in ISP24SY2 LODLIB.

VSAM Container File - OS/390 and VSE/ESA only

Under Natural for VSAM (NVS) 2.3.1 and 2.3.2, you must apply Zap NV31008. If you already have a VSAM container file from a previous version of Natural ISPF, omit the steps described below.

1. Add the following statement to the Natural parameter module:

```
NTFILE ID=186,DBID=n,FNR=m,PASSW=ISPC
```

where:

n is any VSAM DBID

m is any number

ISPC is DD(FCT,DLBL) name of the VSAM file.

2. The module NVSISPC must be linked to the Natural for VSAM nucleus.

Sample JCL for defining the VSAM cluster can be found in Job I008, Step 2002.

3. Natural for VSAM parameter KEYLGH must be set to 126 (minimum value).
4. The file must be initialized by loading the dataset ISPnnn.VINI with VSAM repro.
See Job I008, Step 2003.

Under CICS

If you are defining a VSAM container file under CICS, add an FCT entry. For an example, see Job I005, Step 2203.

Under Com-plete

If you are defining a VSAM container file under Com-plete, catalog the VSAM container file as follows:

- Under Com-plete 4.5, use the FM function of the UUTIL utility, and add the card:

```
DDN=ISPC,VS,R,U,A,MACR=(SEQ,DIR,KEY,SKP,NSR),MRPL=8
```

- Under Com-plete 4.6 and higher, use the CA function of the UFILE utility, and add the card:

```
DDN=ISPC,VS,R,U,A,MACR=(SEQ,DIR,KEY,SKP,NSR),MRPL=8
```

You must also add the appropriate DD cards to the Com-plete startup procedure. For example:

```
ISPC DD SAGLIB.VSAM.ISPCONT,DISP=SHR
```

Under TSO

If you are defining a VSAM container file under TSO, add the following statement to your CLIST for Natural:

```
ALLOC F(ISPC) DA('SAGLIB.VSAM.ISPCONT') SHR
```

Step 13: Natural Security Definitions

Note:

This step applies only if Natural Security is installed at your site.

All security entries for applications and files are made automatically. The entries are not protected and may thus require appropriate modification by the system administrator.

1. Define the applications:

Application	Description
SYSISPS1*	Natural ISPF Internal tables / menus
SYSISPH1*	Natural ISPF Help data
SYSISPFU*	Natural ISPF User menus / tables
SYSISPDB	Natural ISPF Incore Database modules
SYSISPHU*	Natural ISPF User-defined help
SYSISPIU*	Natural ISPF User-defined information (UINFO)
SYSISPX*	Natural ISPF User Exit sources
SYSISPXC*	Natural ISPF Example User Exits for Com-plete
SYSISPXU*	Natural ISPF User-modified exit sources
SYSISPE	Natural ISPF Example library
SYSISPI	Natural ISPF Interfaces

Note:

All libraries ending with U are empty, as they are to be used for customized menus and site-specific help and online information. The content of all other libraries is supplied by Software AG.

* To increase security, the applications marked with an asterisk * should be defined as people-protected (private) and be linked to the system administrator. Startup programs and error transactions must not be defined, and all applications should allow REPORT mode.

- Define the following files in Natural Security as public :

```
ISP-IDB-ADRESSEN
ISP-IDB-CLASS
ISP-IDB-DIRECTORY
ISP-IDB-EMPL-LIST
ISP-IDB-EMPLOYEES
ISP-IDB-INCOME
ISP-IDB-MUSIC
ISP-IDB-NPRUSER
ISP-IDB-TEXT
ISP-IDB-MOVIES
ISP-IDB-PERSON
ISP-IDB-MENU-LINES
ISP-IDB-MENU-CMDS
ISP-IDB-TIMER
```

These files are used in Incore Database examples.

- From the Natural Security Administrator Services Menu select code **G** (General Options) and set the field Free access to functions via interface subprograms to value **Y**.

Step 14: Required Interfaces to other Software AG Products

Library SYSISPI contains some interface programs to other Software AG products. Execute program INSTALL from this library to ensure that all required interface programs are installed properly.

The INSTALL program makes sure that all required interface programs are installed properly by copying them from library SYSISPI to SYSLIB and/or SYSLIBS. In addition INSTALL copies your user exits from the user exit library to SYSLIB thus ensuring that Natural ISPF will not be invoked without your user exits being active.

Before executing the program INSTALL in a Natural Security environment, be sure that the prerequisites mentioned in note 1 (see below) are fulfilled.

The following screen will be displayed by INSTALL, fill in the input fields and press PF5 to start execution:

Please fill in fields and press PF5 to start		
13:34:38	N A T U R A L I S P F	99-05-31
	Installation Program	
Installation environment		
Natural version	... FNAT DB	... FNR ...
PREDICT version	...	
Natural security	...	
Installation parameters		
Enter printer to trace activities.	:	
Copy user exits from library	:	SYSISPXU
Copy user profiles from file number	:
Are you upgrading from ISPl4x ? (Y/N).	:	N
Do you want N-ISPF to be the only		
user interface (no MAINMENU any more) (Y/N)	:	N
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---		
END OK		

The meaning of the input fields:

Field	Meaning
Printer to trace activities	The Natural utility SYSMAN is used for copying interface programs and user exits. If you want to trace the generated SYSMAN commands, enter a printer name in this field.
Copy user exits from library	If you want INSTALL to copy your user exits to SYSLIB, enter the name of the library where your exits are stored. If this field is blank, INSTALL displays a warning that no exits will be copied, before starting execution. Note: If you are installing Natural ISPF for the first time, delete the default value and set this field to blank .
Are you upgrading from ISP14x? (Y/N)	Enter N if you are upgrading from Version 2.1.1 or higher, or if you are performing an initial installation.
Do you want Natural ISPF to be the only user interface (no longer using MAINMENU)? (Y/N)	Use default N if you want to keep MAINMENU active. Y replaces MAINMENU with the Natural ISPF user interface.
Have exits been migrated to version 2.1.x conventions at least? (Y/N)	If you are migrating from a version lower than 2.1.1 : Since the parameters for some of the user exits have changed, confirm that your user exits have been modified as described in the section Migrating from Previous Versions. Copying exits with old parameter lists results in serious run time errors .

Depending on the version of the products installed, the following programs will be copied to SYSLIB and/or SYSLIBS:

Program	Description
NSCX*	Natural Security interface subprograms
SAT*	System Automation Tools subprogram
IS-NCP-*	Default command processors for Natural ISPF
NSPF	For Natural ISPF *

* Last program to be copied, used for verification of successful execution of the INSTALL program.

Important:

The INSTALL program must be executed after every INPL of Natural and/or Natural Security.

Notes:

- Before executing the INSTALL program, check whether the libraries SYSISPFU, SYSISPS1, SYSLIB and SYSLIBS are defined in Natural Security, and verify that you are authorized to access them.
- All user exits are copied to SYSLIB (members IS* from SYSISPX or from the library specified in the screen above).
- If the FNAT system file is protected by an Adabas password, INSTALL prompts for the password. If the FNAT system file resides in a VSAM file, INSTALL prompts for the FNAT name as defined in the NATPARM parameter module.
- Some of the copy operations performed during execution of the INSTALL program are done as 'copy without replacement'. For this reason, any NAT4810 messages reported during execution of the INSTALL program are normal and can be ignored.
- If the INSTALL program has not executed successfully, Natural ISPF cannot be started.

Step 15: Optional Interfaces to Software AG Products

Con-nect Application Programming Interface

If you intend to transfer files to and from Con-nect, or if you want to activate the Con-nect subsystem of Natural ISPF, the application programming interface must be copied: you must copy all objects starting with **Z** from the library SYSCNT2 to the library SYSLIBS.

Notes:

1. The Con-nect system file must be assigned to a physical database file.
2. Library SYSLIB may also contain old programs beginning with **Z** from previous installations. All these interface programs must be deleted to ensure that Natural ISPF calls the newest versions.

Extended Natural / USPOOL Interface under Com-plete

If you are installing Natural ISPF under Software AG's TP-Monitor Com-plete, you also have the option of installing the extended Natural / USPOOL interface. This interface enables Natural ISPF users to use logical printer drivers defined in Com-plete, when printing Natural ISPF objects. If you choose not to install this interface, it is still possible to route Natural ISPF printouts to printing devices defined within Com-plete, but users will not be able to use logical printer drivers.

No specific installation steps are required. It is sufficient to activate the USPOOL interface by setting APPLYMOD 22, as described in the Natural ISPF Administration Documentation.

Step 16: CA-LIBRARIAN Interface - OS/390 only

To activate the CA-LIBRARIAN interface, you must assemble and link the Entire System Server (formerly NATURAL PROCESS) module NATPAML into the Entire System Server load library. For instructions, refer to the Entire System Server Installation and Administration Documentation (version 1.3.n).

Step 17: Setting the Dynamic Natural Parameters - BS2000/OSD only

Many Natural ISPF functions are cursor-sensitive. If you wish to make use of this comfortable mode of operation, you must select appropriate parameter settings to suit your terminal equipment.

Terminal Type 9756 and Equivalent PC Emulations

1. For Type 9756 terminals and for equivalent PC terminal emulations that are capable of the key codes F1 to F20, it is recommended that you use the new Siemens key logic (%KN), as this enables cursor-sensitive use of function keys, which makes optimal use of Natural ISPF functionality.
2. It is also recommended that you use CURPRO=OFF (that is, %T+), thus enabling the cursor to be moved to protected fields: this means you can use the cursor-sensitive form of commands like HELP, POP, BROWSE :C etc., not only in EDIT sessions, but also in BROWSE and LIST sessions.

Terminal Types 9750 and 9755

For Type 9750 and 9755 terminals, it is recommended that you use standard Siemens key logic (%KS), even if this means that function keys cannot be used in a cursor sensitive way.

In this mode, cursor-sensitive functions can only be used by typing the appropriate command (for example, BR :C) into the command line.

Especially the Editor commands RFIND and RCHANGE should then be used in conjunction with the command redisplay feature to allow successive scanning for all occurrences of a search string in an Editor session. To do so, proceed as in the following example:

- enter a FIND command as normal, causing the cursor to be placed on the first occurrence of the search string;
- type &RFIND in the command line and press ENTER; the cursor is again placed on the first occurrence, and the command stays in the command line until it is erased from there;
- successive pressing of the ENTER key causes the cursor to be placed on further occurrences of the search string.

The command &RCHANGE can be used in the same way.

When you are working with %KS, you might prefer the default cursor protection setting (CURPRO=ON, that is, %T-) if you are used to this mode.

Mixed Terminal Types

If your site uses different terminal types, you should not use the Natural TIAM / UTM driver to set these parameters (see the section Modifying Natural Front-end Modules). Instead, it is recommended that you control these session parameters via the LOGON user exit of Natural ISPF. An example for this technique can be found in the library SYSISPE, in the member ISP-LONU (see also the section User Exits in the Natural ISPF Administration Documentation, as well as the online documentation of the user exit).

Step 18: Starting Natural ISPF for the First Time

To start Natural ISPF, enter the command:

SPF

in the command line of your Natural session. This displays the Natural ISPF main menu on your terminal screen. Select the ADMIN (Administrator Functions) option from the Main Menu. The Administrator Menu appears.

All available administrator functions are described in the Natural ISPF Administration Documentation.

Note:

If you are using the Natural ISPF user interface, you can omit this step.

Step 19: Installation Verification

To verify whether the installation of Natural ISPF was successful, issue the following commands in the Natural ISPF Main Menu:

LOGON SYSISPE
PLAY MAC VERIFY

This starts a Natural ISPF command script which guides you through a test cycle of various Natural ISPF functions. First, a help screen appears that tells you how to control the test run and which components are tested. Press PF3 to continue; the next screen is the output of the Natural ISPF TECH command.

Step 20: Moving Incore Database Applications to Production Environment

To move Incore Database applications to your production environment, proceed as follows:

1. Repeat all steps in this installation except the following:
 - Do not load the Natural ISPF INPL dataset.
 - Do not load the Natural ISPF versions file.
 - Natural Security definitions are not required.
 - Do not execute the Natural ISPF INSTALL program.
 - Neither Con-nect interface nor USPOOL and CA-LIBRARIAN interfaces are required.
2. Use SYSMAIN to copy all objects from SYSISPDB to SYSTEM (or another STEPLIB of the application that uses the CALLNAT interface) in the production environment, or define SYSISPDB as STEPLIB for your application.
3. If an explicit creation of an incore file is used in your application, you also need the file (DDM) in your production environment. Use SYSMAIN to copy it.